REF 71C

Year XVI December, 1942 No. 12

INTERNATIONAL INSTITUTE OF AGRICULTURE

INTERNATIONAL BULLETIN OF PLANT PROTECTION

PUBLISHED MONTHLY

REPRINT FROM THE 'INTERNATIONAL REVIEW OF AGRICULTURE'

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IMPERIAL MYCOLOGICAL INSTITUTE 3 APR 1943

ROME
VILLA UMBERTO I
1942

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ROME — PRINTING OFFICE CARLO COLOMBO.

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ACTIVITY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

Permanent Committee of the Institute. — The Permanent Committee was convened for its Winter session on December 14. The Agenda includes a number of questions dealing with the administrative and scientific activity of the Institute.

In this session which, as usual, follows the meetings of the Committee on Publications and of the Committee on Finances, will be discussed important problems interesting the programme of work of the different services. The programme indicates the main lines of the work that the Institute proposes to carry on in 1943.

A summary of the decisions of the Permanent Committee in the course of this Session will appear in our next Chronicle.

The Years of Bibliographic Activity in the Domain of Rural Economics. — Since the Autum of 1932, the Library of the Institute began to make abstracts of periodicals received. By adding abstracts of works and pamphlets dealing with rural economics, the Library has been able to regularly publish an international bibliography consecrated to all the economic and social aspects of Agriculture. This activity, which in the past had been hindered by financial difficulties, was made possible thanks to the friendly interest of the present German Delegate in the Permanent Committee of the Institute, who obtained from the German authorities the grant of the funds needed for the employment of a bibliography expert and opened the columns of the review *" Berichte über Landwirtschaft "* to a periodical bibliography of world literature dealing with agricultural economics in the broadest sense of the word.

In October 1938 the Permanent Committee decided that this bibliography should be published by the Institute itself under the guise of a quarterly periodical bearing the title: *" International Bibliography of Agricultural Economics "*. A certain modification of the shape of the bibliography was required, in order to make it suit with international demand. But the contents, classification and redaction of the quotations were not modified at all. Therefore, the old and new series of the bibliography are entirely homogeneous, and no inconvenience will be met by people who want to consult it.

In order to give an idea of the bibliographic work accomplished during the ten years of existence of this publication, it is necessary to better define the broad field of subjects which it includes. It not only deals with agricultural economics and policies — among which may be mentioned land economics, colonisation, agricultural credit, co-operation, insurance and trade, the studies on rural holdings and agricul-

tural accounting – but also with connected subjects such as, for instance, agricultural history and geography, teaching, rural sociology, legislation, administration and statistics. These items of a general character are followed by sections relative to the different plant cultures, forestry, domestic animals, agricultural industries rural engeneering etc. It goes without saying that all languages appear in this bibliography, and those that are least known, are accompanied by a translation in the most important world languages.

In the years 1933 to 1939 by the types of Paul Parey at Berlin, have appeared 27 separate pamphlets containing a total of 27.000 quotations and constituting the old series of the Bibliography. At present, the quarterly publication issued by the Institute includes 16 pamphlets (united in 4 volumes) with a total of 21.817 voices. Thus in these ten years of bibliographic activity, a total of nearly 50.000 voices have been assembled. This is an eloquent evidence of the great interest shown by the countries of the world in the economic and social problems of agriculture.

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Bettini, F. La Scuola di S. Gersolè. Brescia, «La scuola», 1940. XV, 549 p.

Bischoff, A. und A. K. Joris. Aufbewahrung und Einsäuerung von Kartoffeln. 2. Aufl. Berlin, Reichsnährstand Verlags-Ges. m. b. H., 1941. 80 p. (Arbeiten des Reichsnährstandes, Bd. 83)

Canavesio, A. I segreti della radiestesia in agricoltura. Torino, Palamidessi, 1942. 161 p.

Ciarrocca, V. Natura e reparto dei contributi di bonifica. Roma, [Faenza, Stab. grafico Lega], 1942. 90 p. (Istituto nazionale di economia agraria. Collana di studi scientifici, v. 2).

Die **deutschen** Stammzuchten und Zuchtgebiete. Berlin, P. Parey, 1941. VIII, 573 p. (Handbuch der Schafzucht und Schafhaltung. 2 Bd., 1. Teil.)

Frauendorfer, S. von. Agrarwirtschaftliche Forschung und Agrarpolitik in Italien; Entwicklung vom 18. Jahrhundert bis zur Gegenwart. Berlin, P. Parey, 1942. [4], 307 p.

Fuchs, K. Gärfutter; ein Ratgeber für den Behälterbau und das Einsäuern von Grünfutter in der Praxis. 3. erg. Aufl. Berlin, Reichsnährstand Verlags-Ges., 1941. 83 p. (Arbeiten des Reichsnährstandes, Bd. 6.)

Geith, R. und K. Fuchs. Grünlandfibel; praktische Anleitung zur Anlage, Pflege und Bewirtschaftung des Grunlandes. 3. neubearb. Aufl. Berlin, Reichsnährstand Verlags-Ges., 1941. 75 p. (Arbeiten des Reichsnährstandes, Bd. 13).

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Heuser, W. Der Anbau von Körnermais. Berlin, Reichsnährstand Verlags-Ges., 1940. 64 p. (Arbeiten des Reichnährstandes, Bd. 66).

Könekamp, A. Luzernebau auf leichten Boden. 2. Aufl. Berlin, Reichsnährstand Verlags-Ges., 1941. 52 p. (Arbeiten des Reichsnährstandes, Bd. 48).

Küntzel, C. Der Schafstall. Berlin, Reichsnährstand Verlags-Ges., 1939. 39 p. (Arbeiten des Reichsnährstandes, Bd. 65).

Magnaldi, G. L'industria delle conserve alimentari. Roma, Istituto nazionale per le conserve alimentari, [1942]. 121 p.

INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1942 No. 12

DISCOVERIES AND CURRENT EVENTS *

HUNGARY.

Control of the Moroccan Locust during the Period 1938-1940 †

After a pause of ten years, the control of the Moroccan locust (*Dociostaurus maroccanus*) was again necessary in Hungary in 1938. A large number of hoppers appeared on the territory of the town of Nyiregyháza on a sheep grazing range measuring 280 cadastral arpents (1 cadastral arpent = 0.575465 ha.) utilized as ground for military practice. The local competent authorities having reported them too late, some of these hoppers had already spread to neighbouring grain fields. There is no doubt that this large number was the result of breeding for several years. A large swarm arrived from some unknown locality and multiplied over a period of three or four years. When reported on June 13, the insects were already at the end of the moulting periods and had already attained the adult stage. The danger could only be set aside by rapid intervention. Since June 16 ten machines of Hungarian manufacture for the destruction of hoppers have been at work and this pest was destroyed by ten days work carried out from early morning until late in the evening. The insects which were spread over the fields were driven off by 100 to 150 day-labourers provided with small black cloths onto the neighbouring grassland, onto the road and to the edge of the fields where previously a narrow border had been mowed; here the hoppers were crushed by the machines. The machines could be used successfully only on even surfaces, namely, on fields without plants of any great size. Where it was possible to push the insects into ditches, they were burnt with the aid of petrol-impregnated straw. Thanks to the immediate action taken, the damage caused to cultivated fields was but small and due solely to the unavoidable trampling of the ground.

The year 1939 well showed how effectively the control of the Moroccan locust was carried out, only a few large spots still remaining to be cleared up. The use of machinery was not even necessary. It sufficed to spread straw on the areas invaded and to burn the insects collected there; it was possible to finish operations in a day.

* Under this and the next heading the countries are arranged in French alphabetical order.

† Communication from Mr. SÁNDOR VITÉZ ANTALFY, Ministerial Consellor, Chief of the Phytopathological Section, Ministry of Agriculture, Budapest, Hungary.

On the other hand, the danger was all the greater, in 1939, in the Carpathian region freed two months earlier from Czech occupation, where an enormous number of hoppers appeared on the territory of the commune of Barkaszó in a large meadow of approximately 1500 cadastral arpents and in the nearby fields measuring about 200 cadastral arpents. This appearance was also the result of breeding over several years. Already during the previous years the peasants had notified the Czechoslovakian Government of this mass increase, but no control measures had been taken.

When the farmers reported the matter to the Hungarian Ministry of Agriculture on June 21, part of the insects had already reached the wing stage. Dr Gyula Kadocsa, Director General, accompanied by three assistants and delegated by the Royal Hungarian Institute for Plant Hygiene, went to the scene of infestation and began operations in the early morning of June 24 utilizing ten machines; 150 to 200 workmen chased the insects from the cultivated fields towards suitable areas where they could be destroyed by the machines or else burnt with straw. At first, operations continued throughout the day but after a short while all the insects attained the wing stage, and operations had to be limited to a few hours in the morning and evening as, during the day, the frightened insects flew further away. Operations lasted 15 days during which the insects were progressively destroyed. Owing to the delay in reporting the matter only the hoppers which had already penetrated into the cultivated fields caused damage and chiefly to still green oats and young clover. As regards other crops such as, for example, wheat, rye, and maize, the damage was insignificant.

In view of the fact that locusts had evidently crossed over into other communes and laid eggs on grassland, in 1940, every precaution was taken and the closest control exercized. About May 20, the eggs which had wintered in the soil began to hatch. Hatching was observed everywhere in the elevated regions. On June 5 operations began with the use of twelve machines. These were carried out under the supervision of the Royal Hungarian Institute for Plant Hygiene over a total area of 2010 cadastral arpents of communal grassland pertaining to the following six communes: Barkaszó, Csongor, Rafajna-Ujfalu, Szernye, Gorond and Izsnyéte. Control measures were only effected on the parts invaded which had previously been carefully kept under supervision and that even before the insects had spread. In this way, not only the area treated and the expense were less, but the danger of hoppers dispersing into neighbouring cultivated fields was avoided. Unfavourable weather conditions (continual rains) checked operations considerably; however, the infested areas were cleared up by July 9 and not an ear of grain was lost.

The very successful results have again demonstrated how well the Hungarian locust control methods fulfil the purpose. An essential condition for success, however, is that the appearance of the insects is reported in time. When these are in the larval stage on grassland and not yet spread to cultivated fields, destruction by means of the Hungarian machine is rapid and easy. These machines are constructed according to the plan of József Jablonowski, former director of the Entomological Station of Budapest. They are constituted essentially of large steel brushes attached to a framework drawn by horses and which

crush the hoppers on the ground. Ten machines work in one squad, each after the other, distanced half the width of a machine.

The infested areas are treated from the outside towards the inside, and then in the middle. The Hungarian State has 500 of these machines available, so that control operations can be executed in different localities at the same time. According to Law XXXI of 1907 and the provisions for its application, control operations are carried out by the authorities under the supervision of the competent personnel of the State. The only task of the local authorities is to keep watch over the grasslands and meadows in spring and to report any eventual invasion opportunely. In the case of farmers not recognizing these insects warning arrives too late, the State causes each year, the localities propicious for the breeding of hoppers to be supervised by officers of the Plant Protection Service so that the central department is permanently conversant with the position and can thus take, in due time, the necessary measures for any eventual control action.

ITALY.

Control of the Olive Fly by the Protection Method *

As is known, the problem of the control of the olive fly (*Dacus oleae*) is of considerable importance for the agricultural economy and autarchy of Italy. It suffices to record that this fly destroys every year approximately half the olive oil production of the country to a value (pre-war) of nearly half a milliard lire. Moreover, under present circumstances, the problem is of fundamental importance as regards fat supplies.

Unfortunately, up to date, no insecticide has proved really effective in the control of this insect. Despite the poor results obtained, however, research and experimental work must be continued in the hope of eventually finding a truly effectual and economic means of control. It is also advisable to continue studies on the parasites of *Dacus* in other countries begun and conducted with faith and enthusiasm by F. Silvestri.

In consideration of the present state of the artificial control of the olive fly, I began in 1937 [1] at Portici, in the Province of Naples, experiments with the protection method. This method consists in treating olive trees with substances which repulse the flies seeking a place to lay their eggs, and thus prevents the fruit being damaged.

Experiments with this system were continued in subsequent years (1938-41) in the commune of Villa Volturno and were carried out by the Olive-growing Branch of the former provincial farmers consortium under the supervision of the Laboratory of Agricultural Entomology of Portici. The results from the viewpoint of infestation, development of the olive trees and qualitative characteristics of the oil were good.

* Communication from Prof. GIUSEPPE RUSSO, Director of the University Institute of Agricultural Entomology and Director of the Phytopathological Observatory (Entomology Branch), Pisa, Italy.

The control method consists in spraying the plants with the following mixture:—

Water	100
Soft soap	1
Rich clay	3-5
Calcium polysulphide	3-5

Immediately after spraying, the plants are dusted with crude sulphur which adheres to the sprayed liquid; the whole forms a thin porous layer on the surface of the olives which are protected against insect punctures. Three treatments are given: the first during the first fortnight of July, the second in the third decade of August and the first decade of September, and the third in October, if possible after the first autunnal rains.

This method of control, which will be replaced by another system really effective, more simple and more economic, and which we trust will soon be found, has the advantage of not necessitating the immediate and general spraying of entire olive-growing zones, as is the case when spraying with molasses; in fact, isolated plants can also be treated.

Moreover, the raw materials cost little and in smallholdings, in the métayage system, the labour is supplied by the peasant himself, proprietor, renter or métayer.

This method makes it possible to obtain table olives free from worms and augments our industry, which is important seeing that our production is insufficient to meet the national demand.

The difficulty of this method, under present circumstances, is that of soap, seeing that the role of the latter is to facilitate the adhesion of the mixture to the olives. Other adhesive substances could be found.

It is well to apply this method where circumstances permit, because it would contribute to self-sufficiency in fats.

It will also be useful in controlling indirectly the olive moth (*Prays oleellus*) in the second and third generation. Studies will be made of the question.

Control experiments with the protection method will be continued with a view to rendering it more simple and economic.

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LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany. — A Decree of June 2, 1942 also extends to the district of Galicia the application of the measures relative to the control of fruit crop diseases and pests, measures introduced on June 28, 1941 into the territory of the Government General [see this *Bulletin* 1941, No. 11, p. 205]. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Anfang August 1942, 22. Jahrg., Nr. 8, S. 54).

*** The regulations aiming at preventing mishaps caused by the use of arsenical preparations, drawn up by the Health Office of the Reich and the Reich Biological Institute for Agriculture and Forestry, were published on July 15, 1942.

As a general rule, it is laid down that the arsenicals employed in spraying and dusting should be considered as highly poisonous for both man and beast. The utilization of arsenical compounds or of preparations containing such compounds in wine-growing is prohibited.

The following precautions should be conscientiously observed:—

(1) Arsenical preparations as well as all apparatus or utensils adopted for their use should be stored in locked premises which cannot be utilized for keeping food, forage, beverages, clothing, bedding etc.

(2) The use of arsenical preparations should only be entrusted to adults, reliable and especially instructed in the precautionary measures to be taken.

(3) Touching the preparations in question with the fingers and stirring them up is to be avoided.

(4) The packing material must be destroyed by fire or removed in some other way without incurring any risk. In getting rid of any eventual residue of mixtures, care must be taken not to poison fruits, watering-places, streams, etc.

(5) The operators should be provided with special clothing, glasses and apparatus protecting the eyes and mouth.

(6) Each operator should have sufficient water available to ensure a thorough cleaning.

(7) Spraying and dusting operations should not be carried out against the wind in order to prevent the substance coming into contact with the workmen.

(8) No smoking or eating during work! Before eating, carefully wash the hands and rinse the mouth.

(9) The operators should be repeatedly warned to prevent them touching the spray nozzles with the mouth [to clear them by blowing through].

(10) It is prohibited to treat with arsenicals:—

(*a*) crops in flower;

(*b*) fruit crops (pip-and stone-fruits) when the fruits are in an advanced stage of development;

(*c*) berry crops before harvesting the fruit;

(*d*) vegetables, exception being made for those crops grown for seed.

(11) The use of arsenical preparations should be avoided when between or under the plants to be treated, there are vegetables or other plants the fruits of which have to be harvested within a period of less than six weeks after treatment.

(12) Treatment with arsenical products of crops growing near bee-hives during the hours when the bees are on the wing and without having previously notified the beekeeper is prohibited.

(13) See a doctor as soon as any symptom, even slight, of poisoning is felt. (*Ibid.*).

*** This year the fields are badly infested with wild radish (*Raphanus raphanistrum*] and with mustard [*Brassica sinapistrum*] and consequently an abundant seed harvest is anticipated. Trade in these seeds is blocked by virtue of the Decree of September 7, 1939. The seeds of these two weeds are to be utilized for oil extraction, any other use being prohibited. (*Ibid.*, Anfang September 1942, Nr. 9, S. 62).

*** A Decree dated August 14, 1942 modifies the provisions regulating the use of the preparation ' Tritox ' [trichloracetonitrile]. The administrative authorities are empowered to accede or not to the requests regarding the authorization to employ this preparation, without, in general, having to recur to a decision of the Minister of Agriculture. (*Ibid.*, Oktober 1942, Nr. 10, S. 68).

*** A Decree dated September 10, 1942 regarding the territory of occupied Luxemburg, enforces the police ordinances of January 11, 1938 and February 13, 1940 relative to the trade in and sale of toxic preparations [see this *Bulletin* 1938, No. 4, p. 78 and 1940, No. 6, p. 121]. (*Ibid.*).

Germany (Sudeten Territory). — By Decree of July 14, 1942 relative to the control of hop mildew [*Pseudoperonospora humuli*], it is prohibited, in certain communes where hops are grown, to let hop shoots lie along the ground; they should, in fact, as soon as possible, be drawn up to a height of at least 4 metres from the ground. At the most, three shoots per plant can be kept as reserve stock. These shoots when no longer found necessary should be removed.

Infected shoots should immediately be broken off or cut and subsequently burnt.

The hop-fields should be treated at least three times a year with copper washes or else by some other control measure recognized as being effectual by the Plant Protection Service.

Those parts of the plants left in the hop-field after harvesting the hops should be removed before the leaves yellow. If not required for any usage, they must be destroyed, at the latest, four weeks after harvesting. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. September 1942, Bd. XIV, Nr. 4, S. 89-90).

Italy. — Ministerial Circular No. 31 of August 10, 1942 modifies the Ministerial Circular No. 269 dated April 7, 1942 [see this *Bulletin* 1942, No. 9, p. 122] regulating the distribution of chemical fertilizers and fungicides. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 21 settembre-1° ottobre 1942, anno XIV, n. 27-28, pp. 1679-1680).

*** Ministerial Circular No. 47 dated August 31, 1942 prohibits the use of poison bait composed of zinc phosphide, copper acetoarsenite (Paris green) and sodium arsenites in game preserves. (*Ibid.*, p. 1695).

*** A Ministerial Decree of October 28, 1942 renders compulsory the disinfection of nursery products (fruit and ornamental plants) pertaining to the Rosaceae, in the provinces of Piedmont, Liguria, Lombardy, Venetia, Tuscany, Emilia, Marche, Umbria and Latium. This disinfection should be effected normally by means of hydrocyanic acid gas in special fumigatoria.

Consignments of Rosaceous plants and parts of these plants from nurseries in the aforesaid provinces should be accompanied by a certificate guaranteeing that disinfection has been effected and issued by the Phytopathological Observatory of the region in question, or by other institutions deputed by the Observatory itself.

The directors of the Phytopathological Observatories have the faculty of granting an extension of time up to June 30, 1943 to nurserymen producing fruit and ornamental plants pertaining to the Rosaceous family, who have not constructed the necessary fumigatoria for the hydrocyanic acid gas disinfection of their products, or who have not proved by presentation of documents regarding the matter in question, to have provided for the construction of syndical fumigatoria, or to have the possibility of making use of existing installations.

During this period of extension, disinfection must be carried out according to the methods which will be prescribed by the Phytopathological Observatories.

No authorization can be granted for the establishment of nurseries or horticultural centres intended for the production, even partially, of Rosaceous fruit and ornamental plants, unless the applicants in question can prove the existence of effective disinfection establishments.

Disinfection expenses are charged entirely to the producer or grower of the plants and parts of plants subjected to treatment *

Morocco (French Zone). — By Dahir of June 16, 1942 (1 joumada II 1361) organizing the control of agricultural production, two departments are formed: the department of agricultural production and the department of forests, land conservation and cadastre. Among the duties of the first department are included plant protection and phytosanitary inspection. (*Bulletin Officiel*, Rabat, 7 août 1942, XXXI[ème] année, n° 1554, pag. 662-664).

*** By Vizirial Decree dated July 7, 1942 (22 joumada II 1361) prescribing measures for the control of the pink bollworm (*Platyedra gossypiella*) and the spiny bollworm (*Earias insulana*) whosoever cultivates cotton, for whatever reason, is obliged to destroy all the stems, leaves, bolls, unharvested seed and, in a general way, all trash of these plants.

This destruction is to be effected by burning on the field itself grown to cotton; the transport of this plant trash away from the said field is prohibited.

* Communication from the Ministry of Agriculture and Forests, Rome, to the International Institute of Agriculture.

It is prohibited to carry away from land planted to cotton all the aforesaid plant debris, particularly plants, stems, leaves, bolls and unharvested seed.

The destruction of stems, leaves, uncollected bolls, etc. and, in general, all cotton plant trash, should be carried out immediately after harvesting, and at the latest, before February 1 after the harvest.

The Chief of the regional agricultural department can, in the case of unforeseen circumstances, waive this prescription without, however, allowing the destruction of cotton plan trash to be delayed beyond April 1.

Land having carried cotton should be ploughed to a depth of at least 15 cm. within a month after destroying cotton stalks and trash, ploughing to be effected after a fall of rain or irrigation.

This land should be kept in good condition during the following year and free from cotton ratoons and Malvaceous plants.

Every cotton-grower must deliver his entire crop, before March 15 of each year, to a ginnery approved by the Director of agricultural production.

The cotton should be ginned before April 1.

In the ginneries, the cotton debris and waste resulting from handling or ginning as well as the sweepings should be carefully collected and burnt the same day when produced.

It is prohibited to take away from the ginnery any cotton, waste and sweepings, but only baled ginned cotton and linters in bales.

Cotton seed intended for planting or any other use but the extraction of oil must be treated with heat; this operation should be realized immediately after ginning with an apparatus enabling the seed to be brought to a temperature of at least 55°C. for at least five minutes, and provided with an automatic temperature regulator as well as a daily recording thermometer.

The seed should be packed in sacks when taken from the apparatus and while still hot; the sacks should be closed and sealed without delay.

The seed for oil extraction should be packed in sealed sacks on egress from the gin; they should be kept in these sacks until the time of utilization and poured directly from the sacks into the crushers or oil extractors.

With the exception of treated seed, packed in sealed sacks, and compressed cotton or linters, the holding and transport of ginned cotton or linters not in compressed bales, of unginned cotton and untreated seed, are prohibited after April 15 of the year following harvesting.

The Vizirial Decree of October 16, 1939 (2 ramadam 1358) [see this *Bulletin*, 1940, No. 2, pp. 35-36] relative to the same question is repealed. (*Ibid.*, p. 666).

Switzerland. — The Plant Protection Branch of the Federal Experiment Institution for fruit cultivation, wine-growing and horticulture of Wädenswil has published the third supplement to the list of authorized preparations against plant diseases and pests for the year 1942 [see also this *Bulletin* 1942, No. 9, p. 125]. (*Schweizerische Zeitschrift für Obst- und Weinbau*, Wädenswil 1942, 51. Jahrg., Nr. 22, S. 433-434).

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PRINTING OFFICE CARLO COLOMBO — ROME, DECEMBER 11, 1942.

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